

## Gartner's Top Predictions for 2006 and Beyond

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Six major trends will shake the IT world in 2006 and beyond. Prepare now to take advantage of the opportunities they present.

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### 1.0 What You Need to Know

Gartner's top predictions showcase the trends and events that will change the nature of business and IT in 2006 and beyond. Selected from across our research areas as the most compelling and critical predictions, the trends and topics they address will have a significant impact on IT users, providers and investors in the coming years.

In 2005, a Gartner top prediction forecast the exit of a major PC supplier. Within months, the sale of IBM's PC division was announced. For 2006, we forecast changes on the horizon for communications, the IT workforce and business outsourcing strategies. Wireless and voice over IP will force changes in telecommunications. Regulatory compliance will drive technology investments. A major shift will occur with healthcare and insurance power brokers. Employee-owned PCs will become common in the workplace. In addition, IT jobs will shift to business-knowledgeable professionals.

Our predictions include implications and recommendations for organizations seeking change opportunities. IT users, providers and investors should stand ready to challenge their basic assumptions about business and technology.

### 2.0 Mobile and Wireless

More and more users worldwide are using mobile phones as their only communications devices, causing a seismic shift in the telecommunications sector from wired to wireless. This trend will increase as young people in developed markets — traditionally a highly mobile market segment — mature and make telecom decisions, and as developing markets continue to prefer wireless to wired connections.

#### 2.1 Prediction

**By 2010, 30 percent of U.S. homes will use only cellular or Internet telephony.**

*Analysis by Ken Dulaney, Bob Hafner, Wm. L. Hahn and Tole J. Hart*

#### 2.2 Key Findings

##### **Cellular Handsets Will Continue to Oust Traditional Phones**

Gartner's statistics show that, in 2003, 98 percent of the world's new telecom connections were mobile. This lopsided result stemmed both from strong growth in the wireless sector and from a downturn in the wired segment. Wired connections rebounded in 2004 as people who had postponed purchases began buying again, and this cut the mobile sector's share of new connections to just under 90 percent. Even so, 2003's result was a pointer to the future.

In the United States, roughly 17 million people (about 6 percent of the population), mainly from the youth segment, now use mobile phones exclusively. This number will slowly grow as more young people make their own decisions about telecom. Growth in traditional wired voice connections will slow in North America, Western Europe and other developed markets, as more people dedicate fixed phone lines to DSL links and switch to cellular or Internet telephony (or both). By the end of 2009, roughly 30 percent of U.S. homes won't have traditional wired voice connections.

Mobile communications will remain the preference of developing countries. As a result, wireless links will represent 99 percent of the world's new voice connections in 2009. Subsequent years should see similar figures.

The phenomenal rise of the mobile phone has been a catalyst of economic progress in many countries. It is also laying the foundations of fresh competition all round the world. But coverage and quality remain key challenges for mobile telephony.

### Fixed-Line Carriers Face Huge Pressure From VoIP in Traditional Voice Sector

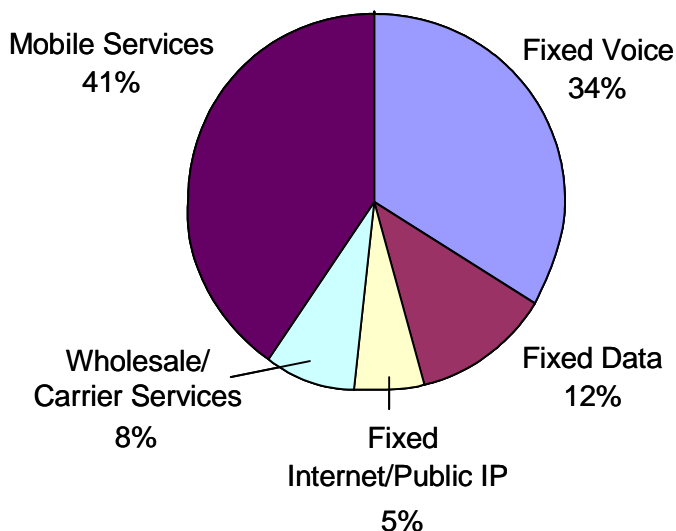
Growing numbers of consumers in developed markets will switch from traditional circuit-switched connections to voice over IP (VoIP) services — that is, to talking over the Internet.

The advantage for consumers is twofold. They get cheaper phone calls — Skype, a prominent VoIP provider, even markets its basic service as "free." And they get new functions, such as the automatic routing of calls to VoIP phones, wherever the receiver may be.

At present, consumers in the U.S. are generally just adding VoIP services to their range of telephony options. But as they get more comfortable with the technology, and as VoIP services improve, they will start to abandon traditional phones. By the end of 2009, roughly 22 million U.S. households will have a VoIP service as their main voice connection.

Worldwide, fixed circuit-switched voice revenue represented over a third of the telecom services "pie" in 2004 (see Figure 2). By the end of 2009, that figure will have shrunk to a fifth. Outside North America and Western Europe, it will fall from more than two-fifths to just over a quarter.

**Figure 1. Worldwide Telecom Service Revenue, 2004**



Source: Gartner (November 2005)

## 2.3 Market Implications

At first glance, the tremendous growth of wireless connections appears to be accelerating the integration of telecom-starved societies into the global economy. But voice communications can only go so far to meet people's information needs: it is really the underlying networks' data capabilities that will propel economies.

Improvements in technology mean that, nowadays, even antiquated phone cables can transmit large amounts of data, and support television, Internet access and voice services simultaneously. The telecom market cannot, therefore, ignore the power of wires to deliver "rich" services to businesses and individuals. Indeed, wired connections will carry much richer information than wireless links and meet a wide range of needs, such as for high-quality video and data transmissions.

Rich data services will enable some businesses and countries to get ahead of their rivals. These services will require dedicated networks that guarantee performance in terms of megabytes — something that only wired technology can provide at present.

Support for this assertion comes from the implications of bandwidth limitations in wired and wireless networks. We estimate that, in 2009, the average wireless connection will have 20 Kbps of bandwidth. Wired connections, by contrast, will carry 100 times more information at an average transmission rate of 2 Mbps. In addition, we project an installed base of 1.3 billion wired connections, compared with 3 billion wireless links. What that means is that wires will still provide about 98 percent of the world's bandwidth in 2009, even though 99 percent of the new connections will be wireless (as will 70 percent of the overall network).

Wireless services will eventually meet high-capacity data needs all round the world, but not within the next 10 years (except in some pockets of prosperity). In that time, some of the Group of Seven (G7) nations — as well as other, technologically minded countries like South Korea and Singapore that are committed to improving their wired networks — could potentially pull so far ahead that the "digital divide" between rich and poor states becomes unbridgeable for years.

## 2.4 Recommendations

Businesses and governments must appreciate the strategic importance of wired connections alongside the pervasive wireless technologies that are the latest phenomenon. They need to look beyond the continuing fall in revenue per wired connection toward the productivity gains and aftermarket services that will deliver returns on those connections. But they must understand that those returns may only materialize in the long term.

## 2.5 Related Research

- "Market Trends: PDAs and Smartphones, Worldwide, 2Q05"
- "Market Focus: Fixed-Line to Mobile Voice Substitution, Western Europe, 2004"
- "Forecast: Global Telecommunications Market Take, September 2005"

## 3.0 Cross-Industry/Compliance

As international commerce regulations continue to increase, regulatory compliance spending is growing at a rate twice that of IT spending. In many cases, IT spending budgets are entirely consumed by regulatory compliance. This leaves organizations few funds or opportunities to devote to developing new technologies.

### 3.1 Prediction

**Through 2008, investigation of new technologies will slow as discretionary budgets divert to regulatory compliance.**

*Analysis by Jorge Lopez and French Caldwell*

## 3.2 Key Findings

Regulation around the world is increasing, and the race for "regulatory parity" between the European Commission and the U.S. government ensures this trend will continue through 2010. Of further interest to IT executives, Gartner research indicates that regulatory compliance spending is growing at a rate twice that of IT spending. In many cases, discretionary IT budgets are entirely consumed by compliance efforts, stifling initiatives that are important to business growth. The increase is not only in the number of regulations, but also in the number of government entities producing them. Consider the sources of regulations: National, state/provincial and local governments, as well as international and regional organizations, are all working to enable some sort of control that ultimately affects business. No part of the global economy is immune to the impact of regulatory activity.

Most companies don't know how much compliance costs. Separating privacy compliance efforts from general security and data management spending, for example, is difficult. However, given that one year has passed since Sarbanes-Oxley Act (SOX) compliance was mandated in the United States, it is now possible to judge the impact of that regulation. Most companies have had to add staff to perform internal-audit functions and manage control activities, bring in consultants to help prepare for the Section 404 audit, and contract for the attestation audit itself, which audit firms require be billed on a time-and-materials basis. Based on a March 2005 survey by Financial Executives International, SOX Section 404 audit fees represent 57 percent of total annual audit costs. Audit firms have also benefited by providing consulting assistance to companies that are preparing their internal controls and compliance for the Section 404 audit. Companies engaging in new audit contracts have seen fees for the annual audit, which is normally performed at a fixed price, rise by 35 percent or more.

The countries that comprise the Organization for Economic Cooperation and Development (OECD) and many other nations have changed their corporate governance codes since Enron and other corporate scandals surfaced. Although most have not gone as far as adopting rules to mandate audits of internal controls, implementation of new international accounting standards in these regions is improving transparency. Furthermore, many companies not directly affected by SOX that compete against U.S. organizations are adopting best practices for managing internal controls from SOX implementations so that they will be perceived as comparable by investors.

## 3.3 Market Implications

Regulations in general represent interests formulated by regulators that, in turn, represent costs for each business operating under their jurisdiction. These new regulations change the business realities that executives must confront. In addition, new or modified regulations represent change to the enterprise, which IT must accommodate. This opens market opportunities for technology solution providers that can help meet these new requirements without harming existing systems.

New IT solutions have focused on SOX and similar corporate governance codes and regulations worldwide. Companies registered with the U.S. Securities and Exchange Commission (SEC) must comply with SOX, regardless of where their headquarters are located. One subsidiary effect of SOX is that some countries, such as Canada and Japan, are aligning their financial reporting rules with those of SOX. The European Union also is gradually implementing some SOX-like requirements and is considering the implementation of third-party internal-control audits.

The impact of compliance and corporate governance on new software spending is significant. By 2008, annual worldwide new software license spending for compliance and corporate governance will be \$9.2 billion. Although the financial compliance process management (FCPM) market represents only a small fraction of that spending, new FCPM license spending will reach \$394 million by 2008.

### 3.4 Recommendations

New regulations can, but shouldn't, catch companies unawares. When SOX hit, many IT organizations found they lagged behind the finance organization in responding, and the finance organization itself was shocked by the tremendous change needed to comply with the new regulations. As heavily affected as it is by regulatory change and as much as technology can help relieve the company's compliance burden, the IT organization should lead in responding to new regulations. We recommend that IT organizations:

- Develop a regulatory "radar scope" that tracks new and changing regulations by source of regulation, timing, impact or size, and area of impact. Regulatory tracking must be a key part of IT strategic planning, to make the business more responsive while sustaining and improving business performance. While not intended to replace the work of corporate lawyers and accountants, the IT organization should plan for mandated change from regulations.
- Reduce the costs of compliance by automating manual process controls, implementing solutions that reduce the amount of internal and consulting labor required to document and maintain internal controls. Companies should also strive to reduce costs associated with internal and external audit by using new audit and reporting tools.
- Use a risk assessment to guide compliance efforts and identify key controls. Long term, reducing the number of controls is the most effective way to reduce costs.

### 3.5 Related Research

- "Regulatory Change Ahead Disrupts Growth in Most Industries"
- "The IT Executive's Best Practice Guide to Sarbanes-Oxley"
- "Corporate Governance Spending Disrupts Software Purchases"

*If you are not a Gartner Industry Advisory Service client, you may not have access to these documents.*

## 4.0 Healthcare

The well-known high proportion of errors in medical care is usually not due to negligence by medical staff: Delivering care is a complex process with many potential failure points. The amount of medical data is disproportionate to the amount of technology available to synthesize and correlate it. Despite an obvious connection between good information, good process and good outcomes, healthcare has underinvested in IT. This is poised to change.

### 4.1 Prediction

**A 50 percent growth in healthcare software investment will halve preventable deaths by 2013, saving more than 20,000 lives in the United States alone.**

*Analysis by Wes Rishel; Barry R. Hieb, M.D.; John-David Lovelock; and Vi Shaffer*

### 4.2 Key Findings

In 1998, the Institute of Medicine estimated that preventable medical errors cause the death of between 44,000 and 98,000 U.S. citizens annually. This is but the tip of a massive iceberg. For every avoidable death, dozens of other patients experience unnecessarily ruined lives, pain and financial hardship, while businesses and governments experience lost productivity and intense

consumer dissatisfaction. Avoidable errors add to already-too-high healthcare costs, because treating a condition right the first time is normally cheaper than spending additional time and money treating complications stemming from errors of omission or commission.

This flawed care is usually not due to negligence on the part of individual caregivers. It arises because delivering care is a complex process involving many teams, technologies and handoffs. Caregivers are typically rushed, and yet are expected to instantly grasp reams of patient data and apply an enormous and rapidly expanding body of knowledge to their decisions. There is more data than ever, but not enough help synthesizing and correlating it. Currently, the practice of good medicine exceeds the limits of unaided human cognition.

Despite the obvious connection between good information, good process and good outcomes, healthcare has historically underinvested in IT, especially compared to industries that deal with far less complex data and collaboration challenges. However, the industry is finally beginning to change. Governments, private employers and progressive care delivery leaders in many countries are putting oversight, muscle and large financial investments into accelerating IT adoption, establishing consensus-based and data-driven quality measures, and achieving transparent public reporting. The investment growth will exceed 50 percent by 2009. By 2013, the software investment and associated process and culture re-engineering will enable clinicians to reduce the current level of preventable deaths by 50 percent, realize corresponding improvement in the quality of care and permit each country to reap the resultant cost savings (estimated to be more than \$10 billion for the United States alone).

### **4.3 Market Implications**

The earliest adoption — and realization of improved safety and cost containment — will occur in markets where the ultimate payers (governments or other employers) exercise leadership to stimulate simultaneous adoption of IT, consensus quality measurements, transparent reporting and aligned financial incentives.

The largest IT challenge in most countries will be deploying IT to the numerous small practices that provide most primary care. The requirement is to provide systems that offer strong decision support and aid process re-engineering for quality, that can be installed and maintained economically, and that are sufficiently interoperable to ensure information sharing as care passes among healthcare organizations.

### **4.4 Recommendations**

Organizations that pay for their employees' healthcare should identify regions where they fund care for an economically significant portion of the patient population and target these regions with specific healthcare provider incentive programs. These programs should encourage the adoption of national consensus standards of quality, transparent reporting, and specific IT systems that support quality and patient safety.

Many national and state/regional governments have already embarked on this path. They should focus on gaining manageable early wins and establishing a health information infrastructure that will serve as a basis for growth to more healthcare organizations, quality standards and collaboration. In the U.S., federal Medicare, state Medicaid and all government-sponsored employee insurance programs should ensure consistency in both messaging and metrics.

Patients should seek organizations that are using a computer-based patient record system and that make their outcome results publicly available.

The U.S. Congress should coalesce a number of bills into a national program that recognizes investments in the first four years will not be "revenue neutral" for a few years.



The clinical and administrative heads of healthcare professional societies and care delivery organizations must be prepared to assert the organizational commitment, leadership and will necessary to rise to this challenge and optimize this expanded investment.

## 4.5 Related Research

- "Healthcare Provider IT Spending Forecast, 2004-2009"
- "Patient Safety Emerges as a Priority for Healthcare IT Departments"
- "New JCAHO Intensive-Care Measures Influence IC Unit Information System Plans"

*If you are not a Gartner Industry Advisory Service client, you may not have access to these documents.*

## 5.0 Insurance

Business process outsourcing (BPO) firms are helping to reduce the burden of scarce internal resources for insurers, thus becoming competitors in the insurance space. By 2008, BPOs will capture a significant percentage of global annual premiums for life, annuity, and property and casualty (P&C) products, shifting revenue and substantially affecting the market landscape.

### 5.1 Prediction

**Insurers beware: BPOs will capture \$11 billion of insurance revenue by 2008.**

*Analysis by Annemarie Earley, Stephen Forte and Doron Cohen*

### 5.2 Key Findings

Many insurers are turning to external insurance BPO service providers to expedite the legacy transformation process and reduce the burden of scarce internal resources. Intellectual capital is migrating from insurers to BPO providers, enabling the providers to become competitors — not just service providers — in the insurance market space. Gartner estimates that, by 2008, BPOs could capture up to 1 percent of global annual premiums for life, annuity and P&C products. In the United States alone, this would translate into a shift of nearly \$11 billion to business process outsourcers, based on 2003 and 2004 estimates of U.S. premiums for the two insurance segments that together total \$1.1 trillion. This revenue shift will have a substantial impact on the market landscape:

- To answer competitive threats, prepare for mergers and acquisitions, shed unprofitable books of business, and strengthen their market position, insurers are redefining and re-engineering their core business processes (such as policy and claims management) to attain greater operational efficiency and improve financial performance. This will force insurers to integrate and optimize business processes across multiple function areas.
- A key enabler of this transformation trend is the development of time and unit cost measures for business processes. This task relies on a firm knowledge of costs at each phase of a business process. However, insurers lack sufficient data about their cost structure and will find it too difficult to build the metrics themselves. Without such data, insurers are finding it difficult to know the correlation between time and unit costs, and the profitability of their lines of business. Therefore, insurers are shifting this burden to insurance BPO providers.

- Leading BPO providers are capturing and accumulating a wide range of insurance core business process knowledge, as well as developing the elusive cost information that individual insurers lack.
- The burden of high-profile regulatory investigations into some key business practices is spurring insurers to outsource or seek business partners to support their operational regulatory compliance needs. Because insurers are uncertain of the costs of complying with a confusing, overlapping array of legislative and regulatory strictures, they will be encouraged by their senior executives to outsource compliance operational activities. However, compliance responsibility remains with the insurer.

### 5.3 Market Implications

- Insurers' focus will return to their core competencies of assigning and assuming risk, as well as underwriting. Internal investment for business process operational expertise will be reduced as insurers buy these services from BPO providers.
- Insurance BPO providers will offer highly refined operational metrics that enable insurers to benchmark their competency in key process areas and entice the insurers to use their services.
- Outsourcers will bundle knowledge gleaned from their aggregated business process clients and sell it to other companies. Knowledge is inexpensive to exploit, which will enable outsourcers to underprice and overdeliver business process services.
- As business process outsourcers capture more core processes from insurers, the exploitation of this knowledge will begin to blur distinctions between insurance companies and service providers. The ensuing debate will roil the insurance industry.
- Insurers that opt to regain their outsourced business processes (due to strategic requirements or lack of success in an outsourced environment) will obtain valuable information about the cost of their business processes. This knowledge will provide them with fodder for deciding which business processes to retain and which to offload.
- BPO providers' penetration into the core insurance business will take different forms for different segments. For example, regulations and capital requirements present higher barriers to entry for the life insurance segment than for P&C. Accordingly, we may see BPO providers with third-party administrator and claims-processing expertise directly penetrate the P&C market, while the path for entering the life insurance segment may start with the acquisition of closed books of business or through the acquisition of small insurance companies that have failed because of inadequate business processes (in which BPO providers have the advantage).
- Insurance BPO providers will be in a position to form alliances with established financial services organizations to launch new ventures for the manufacturing and marketing of new, innovative insurance products and services. The winning combination of insurance BPO providers' process and system capabilities, together with financial institutions' capital and distribution channels, will give birth to new, competitive players in the insurance arena. Armed with superior insurance business process knowledge and unencumbered by historical blocks of business or obsolete legacy systems, these new ventures will be well positioned to capture a meaningful chunk of insurance market share.

## 5.4 Recommendations

- If you don't have it, buy it. Expect business process service providers that have domain expertise and proven capabilities in insurance business processes to generate breakthrough operational and financial performance.
- Redeploy internal business process expertise to the areas of product development, risk management and underwriting skills. These are the new key success factors.
- Contractually protect your unique intellectual property by understanding your business process. Review or create contracts that define your intellectual property in detail, and stipulate how this intellectual property can be applied to insurance business processes.
- Leverage outsourcers' knowledge and experience to develop a contingency plan to give you the option of bringing business processes back in-house. Design your plan based on refined time and unit cost metrics developed by the BPO supplier.

## 5.5 Related Research

- "How to Select a Provider for Your Strategic Insurance Initiatives"
- "Insurer Makes the Most of Outcome-Based Sourcing"

*If you are not a Gartner Industry Advisory Service client, you may not have access to these documents.*

## 6.0 PCs

As more employees use corporate notebooks for personal use, many organizations are exploring employee-owned notebook programs. Notebook prices have declined dramatically during the past few years, making them more affordable for many employees. For organizations, the reduced cost and benefits of taking PC assets off the company books are substantial. As our prediction demonstrates, the trend toward employee-owned notebooks is growing.

### 6.1 Prediction

**By 2008, 10 percent of companies will require employee-purchased notebooks.**

*Analysis by Leslie Fiering, Brian Gammage and Martin Reynolds*

### 6.2 Key Findings

Company-owned notebook computers are commonly used for personal purposes, such as e-mail, music and videos. This personal use constitutes a significant personal benefit, beyond that experienced just five years ago. The time has come for notebooks to move from company ownership to personal ownership. Since notebook prices have declined dramatically during the past few years, fully loaded business-class notebooks are available for less than \$1,800.

This transition is most likely to be managed through a notebook allowance, much like car mileage. Companies will require well-managed infrastructure and systems to support the new usage models, but significant hardware assets can be removed from the ledger, and IT support resources can be reallocated to critical business initiatives.

In a Gartner survey, 60 of 200 respondents reported that at least 30 percent of their employees access company-owned resources with non-company-owned devices today, and 102 respondents expect that at least 30 percent of their employees will do so by 2008. While these

PCs are not part of a company plan to shift PC ownership, this indicates that substantial segments of the workforce can operate outside of the office with diverse PCs and minimal IT support.

At least two multinational corporations are piloting employee-purchased-PC programs with approximately 10 percent of their employees. Early results have shown a reduction in IT support costs. It was also evident that certain segments of the workforce were more suited to the employee-purchased-PC plan than others — for example, young workers in Asia/Pacific were more technologically self-reliant. On the other hand, workers with very specialized applications are likely to be suited to more-traditional PC ownership and support plans.

### 6.3 Market Implications

If you don't own an employee's notebook, you cannot manage it in the way you manage your in-house devices. Security and policy will need to evolve to ensure that allowing work from unmanageable devices does not result in unmanageable risk. Compliance issues, appropriate data use and liability ramifications will have to be resolved.

Many of these issues can be addressed by standardizing application interfaces so that employees can use them over the Web, with almost any type of PC. This strategy does not address the issue of working offline or with specialized applications, but it works well for a significant percentage of employees and simplifies the challenge of working with unmanageable PCs. Targeted security programs, such as Sygate's "on demand" product, can be used to create a virtual security perimeter on an unmanageable PC for secure access to Web-based applications.

PC virtualization will become a strong enabler for employee ownership of notebooks. Companies will use this technology to strongly enforce policies covering notebook use for company purposes in one virtual machine or partition, while allowing the user total flexibility for personal use in another. Users will gain more access to the full capabilities of their notebooks, while the company can block the ongoing encroachment of personal data and applications into enterprise systems. The user provides a notebook loaded with a "host" operating system (OS), such as Windows. The notebook hardware and this host OS remain permanently outside the responsibility and security perimeter of the company. The company supplies the corporate image, packaged as a virtual machine (VM) using a product such as VMware ACE. The user can store personal data and install personal applications under the host OS, while corporate data and applications reside only inside this locked-down VM. IT supports only this corporate image and the VM that contains it. Support for the hardware and any other software installed on the notebook is the responsibility of the user. Another huge advantage of this approach is that VM configuration is independent of changes in underlying hardware, so the company can create a single image for a wide variety of notebooks.

In most cases, companies will have to provide company notebook stipends — similar to those for company cars — in return for which the employees agree to ensure a suitable notebook (or vehicle) is placed at the disposal of the company. The advantage to workers will be the opportunity to optimize their notebook choices to meet personal requirements, with a likely increase in productivity and user satisfaction. Less user time will be spent trying to circumvent corporate standards and less time will be spent by IT supporting users with routine tasks that they are capable of doing themselves, if permitted.

Direct costs will go down for IT through the reduction of image complexity and of support issues caused by the interaction of authorized and unauthorized applications. However, much of the indirect cost (support and administration) will pass to the user, who will be responsible for hardware and host OS maintenance. A third-party notebook support and maintenance program will be a standard requirement for any user participating in an employee-purchased notebook

plan. However, for some users, the opportunity cost of increased "self-support" and lost productivity will exceed the savings in IT direct costs. Some users may prefer to continue being managed by IT, and there will be others for which an employee-purchased notebook plan should not be considered.

The employee stipend programs and employee self-support do not eliminate the cost of PCs but shift them to employee benefits (the stipend) and indirect user operational costs. The payback is removing PC assets from the company books and freeing IT to focus on critical business initiatives.

PC vendors will have to adapt notebook products, support programs, financing and go-to-market strategies. Vendors will likely find fewer large deals or, perhaps, more deals with variable quantities as some employees opt out. However, vendors that can attract individual employee transactions could earn higher margins on that business. There will be a competitive advantage for the notebook vendors that can design comprehensive, cost-effective "group" pricing and support programs. Also, because users will have much say in their system selection, more consumer features will be introduced into business notebooks.

## 6.4 Recommendations

Employee-purchased machines do not have to open the doors to anarchy. The company can specify a select number of models from particular notebook vendors — although it will be important for employees to feel that they have choice and flexibility. Employees should be given an allowance (which can be pretax) to buy their notebooks and a support/maintenance program. They may add their own money to upgrade. "Group discount" support rates (similar to group health insurance rates) may also be negotiated to ensure appropriate support coverage and steer demand toward preferred suppliers.

Policies will have to explicitly clarify exactly what behaviors and activities are permitted via the corporate network; what is expected of users regarding the corporate PC system image; and what users must do to maintain their systems: for example, "install by" dates for security patches and prohibition of any personal communication activity over the corporate network. Minimum availability of a suitable notebook for work purposes will likely become a key individual performance metric.

Initially, employee-owned notebooks will make the most sense for remote, work-at-home and traveling workers (out of office 80 percent of the time) as well as temporary and contract workers. There will be many categories of employees for which such schemes do not make economic sense. It will be important for organizations to limit availability of employee-purchased notebooks to those groups of users for which the value of IT cost savings achieved will exceed the value of working time lost dealing with "self-support."

Because PC virtualization is such a critical enabler, start to understand more about this technology now.

## 6.5 Related Research

- "Computing Power Shifts to the Consumer; Corporate Computing Must Respond"
- "The PC Industry Needs Clear Leadership on Virtualization"

## 7.0 IT Workforce

There will be a significant disruption of IT employment expectations as IT specialization recedes: Infrastructure specialists and programmers will be hit especially hard. However, this will be good

news for fast-growing outsourcing and consulting companies — and for universities, community colleges and distance-learning programs, if they can reshape their curricula quickly.

## 7.1 Prediction

### **The job market for IT specialists will shrink 40 percent by 2010.**

*Analysis by Diane Morello*

Make no mistake: If you are an IT specialist who ignores or downplays the demand to develop business-oriented competence, you are at risk of being unemployable within the next five years. Only a rapid and intentional expansion from technical specialization into areas that more clearly link technology to enterprise goals and advantage — such as information design, process design and relationship management — will position today's IT specialists as credible business contributors. Speed is important: For example, the window of opportunity for business process design will start to close by 2010. By then, emerging process modeling tools in the hands of business leaders will do more to align business and IT objectives than will the evolution of IT specialists' business competence.

IT specialists must learn to demonstrate a deep contextual grasp of their companies' competitive forces, revenue and cost drivers, industry influences, product and service strategies, differentiating processes, customer bases, regulatory requirements, cultural constraints, and external suppliers. Moreover, they must demonstrate and apply that understanding through a widening selection of roles, assignments, projects and problem-solving methods. Finally, they must use that contextual knowledge to craft IT solutions that reflect business situations.

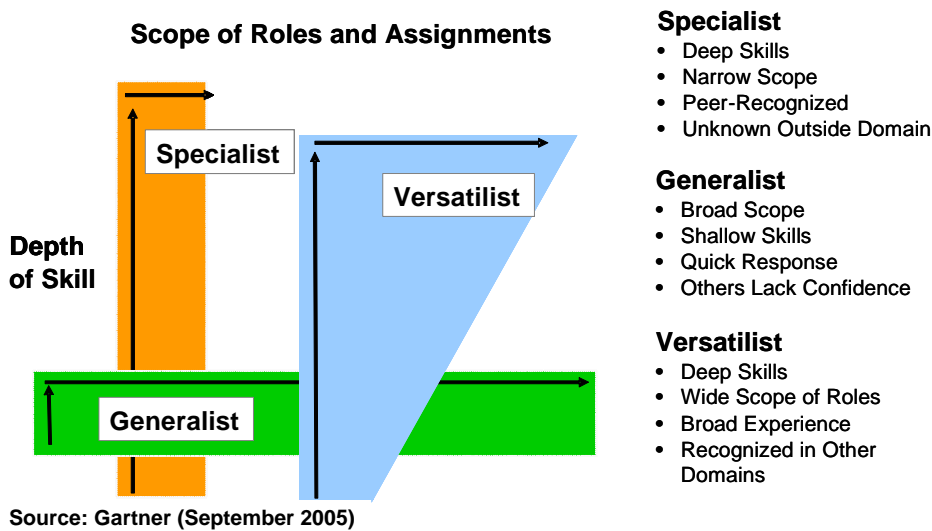
Why should IT specialists bother with this program of learning? Because the pace of business change requires adaptability and flexibility, and the broader and richer the experiences and grasp of business drivers, the more successfully those IT practitioners will stay ahead of the curve. Many will use that deeper contextual grasp to break down barriers between business and IT and move as smoothly through business worlds as through technology worlds. In this way, they can differentiate themselves as multifaceted contributors.

Be warned. Although the prediction may seem relevant only for IT professionals in user companies, it is equally relevant for IT professionals working with technology vendors and service providers. The long-term value of today's IT professionals will come from understanding and navigating the situations, processes and buying patterns that characterize vertical industries and cross-industry processes. Those areas represent the enduring "sweet spots" for vendors and service providers as surely as they represent the enduring sweet spots for businesses that use technology.

### **The Rise of Versatilists**

Contextual understanding and the application of IT to business problems and opportunities raise a point: Whereas the past two decades have been known as the era of IT specialists, the coming decades will see the emergence of IT "versatilists" — people whose multidisciplinary assignments, roles and experiences create a potent blend of synthesized knowledge, competencies and context to fuel business value (see Figure 1). We anticipate, moreover, that companies will alter their balance of specialists and versatilists, moving from 70 percent specialists today to about 70 percent versatilists tomorrow.

**Figure 2. IT Workforce Roles and Assignments**



Three drivers make versatilists the vanguard of a changing IT profession. For one thing, IT organizations are shrinking in size, and IT people who are now selected and developed must have the capacity to move fluidly and effortlessly into multiple projects, disciplines and processes. In addition, the IT profession is under intense pressure to contribute tangibly to business results and to accelerate growth and innovation. Finally, compressed business cycles compel businesses to seize or shape opportunities at a rapid pace, quickly assembling multifaceted people with broad experience into effective teams. Too much specialization thwarts organizational agility.

## 7.2 Key Findings

- Formal and informal surveys of Gartner clients reveal new emphasis on roles that put IT professionals in direct contact with business counterparts, including roles such as relationship managers, workplace collaboration designers or business analysts (see "Capitalize on the Evolving and Expanding Role of the Business Analyst"). These roles call on some elements of technical knowledge, but they depend significantly more heavily on people's behavioral competencies and skills in communicating, negotiating, listening, learning and interpreting.
- Asked which domains of expertise will experience the greatest growth or the greatest decline during the next five years — technology, information, process or relationships — equal numbers of CIOs and IT leaders expect process design and relationships to see the greatest increase. Meanwhile, they unanimously expect the domain of technology infrastructure and services to experience the greatest decline. Information design falls somewhere in the middle.
- Although CIOs and senior IT leaders acknowledge the need for technical specialization in many areas, especially around infrastructure, many are developing new rules and programs for increasing the percentage of versatilists in their organizations. They admit that too heavy a concentration of specialists inhibits their organizations' ability to assign and reconfigure people dynamically to seize opportunity and respond to business changes. Companies with aggressive personalities in the workforce and technology dimensions of the Enterprise Personality Profile will lead the way in developing

versatilists (see "The Enterprise Personality Profile Assesses Your Preparedness to Meet Challenges").

### **7.3 Market Implications**

- Significant disruption of IT employment expectations looms; specialization recedes.
- Infrastructure specialists and programmers are especially affected.
- This is good news for fast-growing outsourcing and consulting companies that need people.
- Small and midsize companies may benefit in recruitment.
- There is potentially high enrollment in industry-specific expertise and learning (such as bioinformatics).
- There is potential scarcity of localized or specific skills that have lost their luster.
- Universities, community colleges and distance-learning programs have an opportunity to shine here — if they can reshape their curricula quickly.

### **7.4 Recommendations**

#### **7.4.1 IT Practitioners**

- Assess your professional path. Which domain of expertise have you pursued? Which do you want to pursue? Which roles and assignments do you need to develop? Which personal and professional strengths make you stand out?
- Recast your identity from occupation ("I work in IT") to industry-, process- and business-based accomplishments in which you tangibly contributed to success.
- Enroll in courses around total quality management, process improvement and project management.
- If applicable, get to know your enterprise's total quality management champion and get involved in emerging programs.

#### **7.4.2 IT Managers**

- Identify which business-oriented competencies your company needs. Break the competencies into groups — technology, information design, process design and relationships — and add basic business principles.
- Prepare for an onslaught of hard-core technical people who want to know their options and opportunities. IT practitioners and employers should work together: The changes that this prediction implies are structural, not temporary.
- Set a strategy for finding business-oriented people: Should you develop people from inside your organization? Pull people from elsewhere in the business? Hire from outside the company? Use external consultants and service providers?
- If you, as a manager or leader, need business competence, move quickly. Enroll in leadership development programs, advanced degrees and programs that will help you assess your emotional intelligence and interpersonal dynamics.



## 7.5 Related Research

- "The IT Professional Outlook: Where Will We Go From Here?"
- "The Enterprise Personality Profile Assesses Your Preparedness to Meet Challenges"
- "Capitalize on the Evolving and Expanding Role of the Business Analyst"

## Acronym Key and Glossary Terms

<b>BPO</b>	business process outsourcing
<b>FCPM</b>	financial compliance process management
<b>G7</b>	Group of Seven
<b>OECD</b>	Organization for Economic Cooperation and Development
<b>OS</b>	operating system
<b>P&amp;C</b>	property and casualty
<b>SEC</b>	U.S. Securities and Exchange Commission
<b>SOX</b>	U.S. Sarbanes-Oxley Act
<b>VM</b>	virtual machine
<b>VoIP</b>	voice over Internet Protocol

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